AKAI

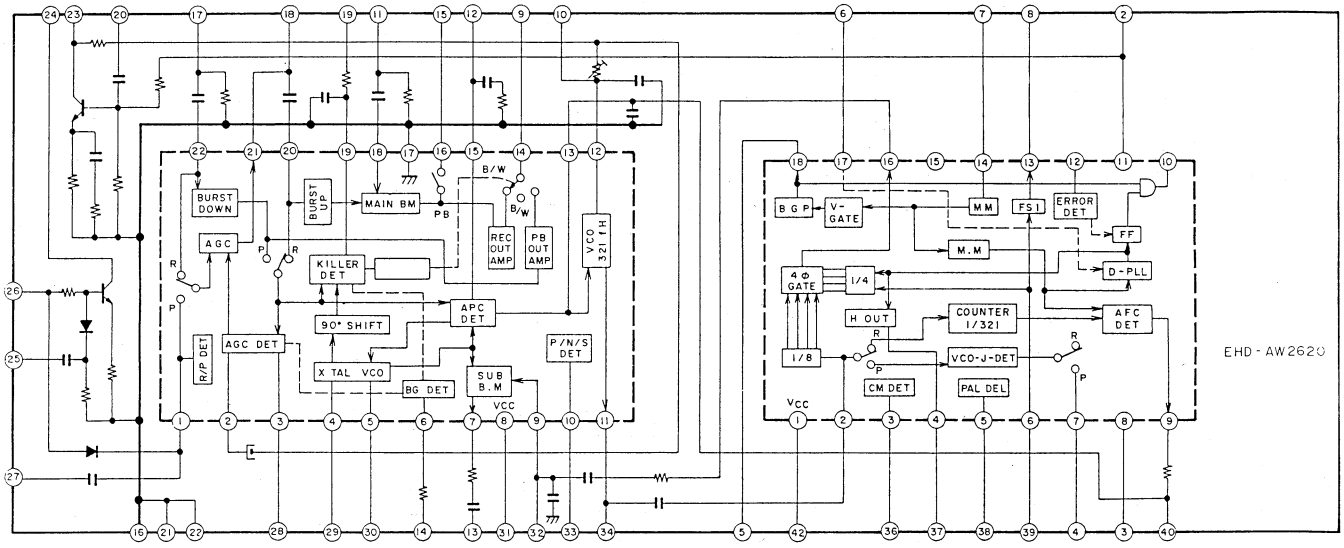
MODEL VS-515U/UM
MODEL VS-525U
MODEL VS-555U/UM
MODEL VS-565U
MODEL VS-5151U

SCHEMATIC DIAGRAM AND PC BOARDS

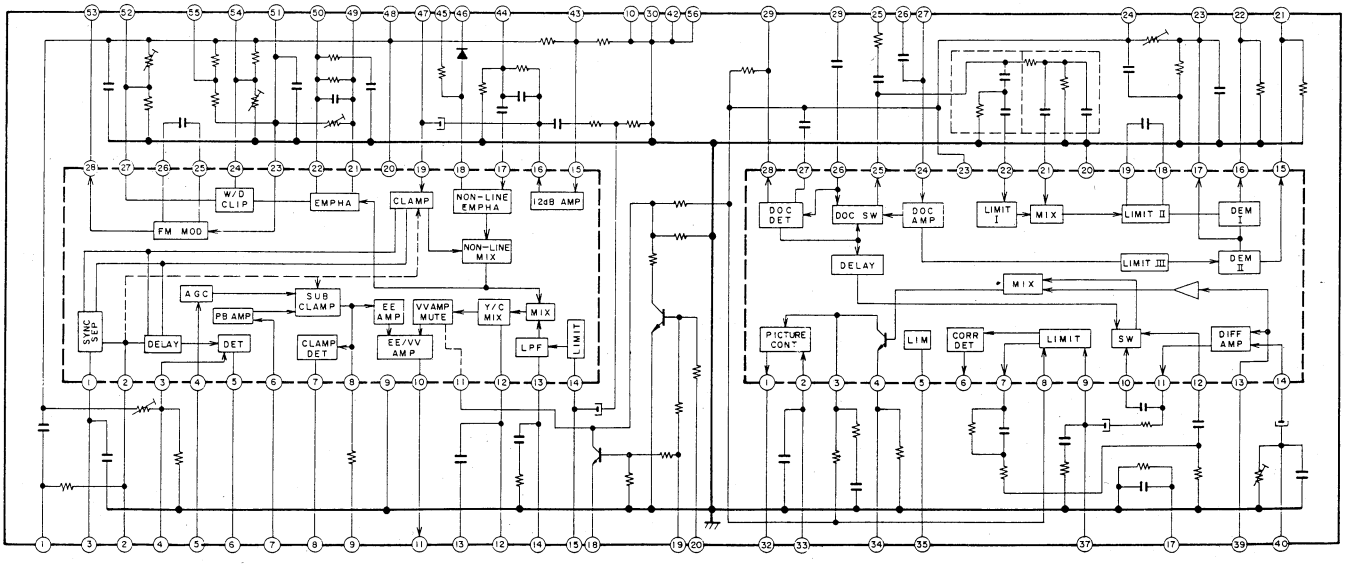
TABLE OF CONTENTS

1. SCHEMATIC DIAGRAM OF ICs 2
2. SYSTEM CONTROL AND POWER SUPPLY BLOCK DIAGRAM 4
3. SERVO BLOCK DIAGRAM 5
4. VIDEO BLOCK DIAGRAM 6
5. HiFi AUDIO BLOCK DIAGRAM 7
6. CONNECTION DIAGRAM 8
7. DRUM MOTOR SCHEMATIC DIAGRAM 9
8. POWER SUPPLY PC BOARD AND OTHER PC BOARDS 9
9. VS-515U/UM, 525U, 5151U MAIN (2 HEAD) SCHEMATIC DIAGRAM 10
10. VS-515U/UM, 525U, 5151U MAIN (2 HEAD) PC BOARD 11
11. VS-555U/UM, 565U MAIN (4 HEAD) SCHEMATIC DIAGRAM 12
12. VS-555U/UM, 565U MAIN (4 HEAD) PC BOARD 13
13. HiFi AUDIO 1/2 (HiFi AUDIO BLK) SCHEMATIC DIAGRAM 14
14. HiFi AUDIO PC BOARD 15
15. HiFi AUDIO 2/2 (HiFi AUDIO BLK) SCHEMATIC DIAGRAM 16
16. HiFi AUDIO PC BOARD 17
17. OPERATION SCHEMATIC DIAGRAM 18
18. OPERATION PC BOARD 19
19. ST PCB SCHEMATIC DIAGRAM 20
20. ST PC BOARD 21
21. VS-515U/UM, 525U, 5151U PRE AMP (2 HEAD) SCHEMATIC DIAGRAM AND PC BOARD 22
22. VS-555U/UM, 565U PRE AMP (4 HEAD) SCHEMATIC DIAGRAM AND PC BOARD 23
23. RC-V515A REMOTE CONTROL UNIT SCHEMATIC DIAGRAM 24

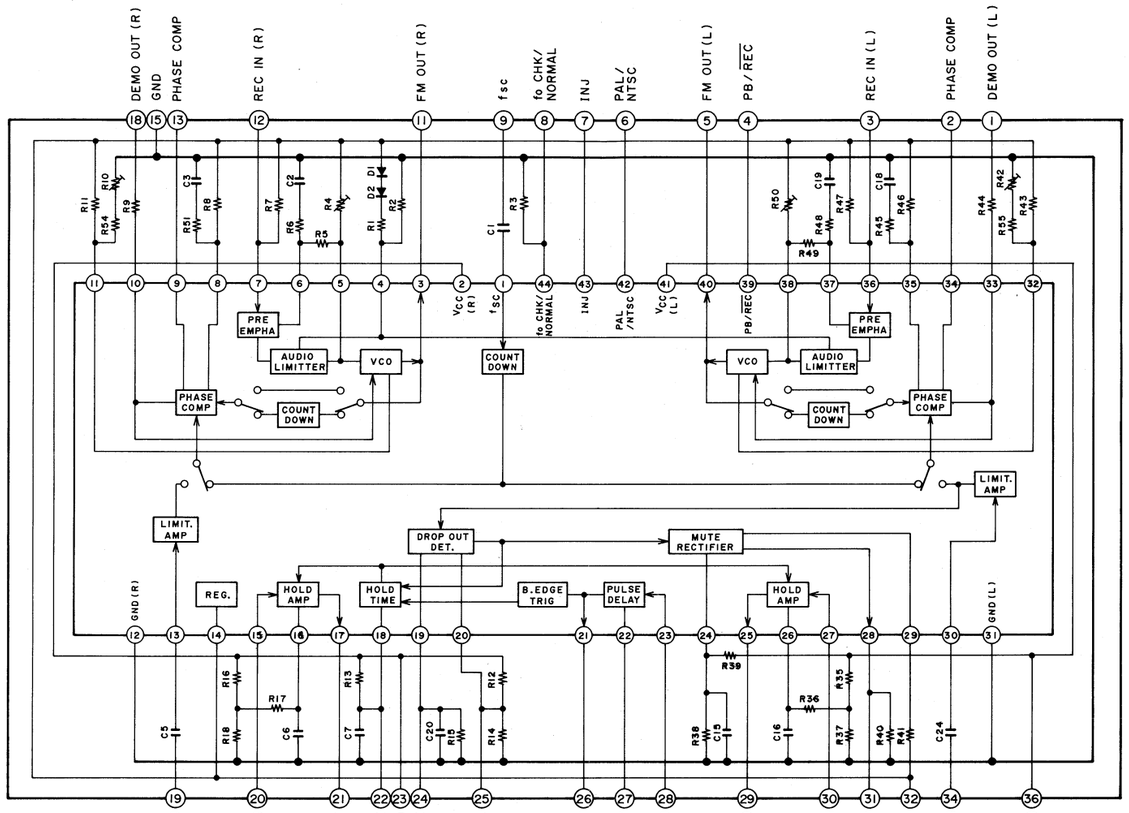
EHD-AW-2620 (NTSC CHROMA SYGNAL PROCESSOR IC)



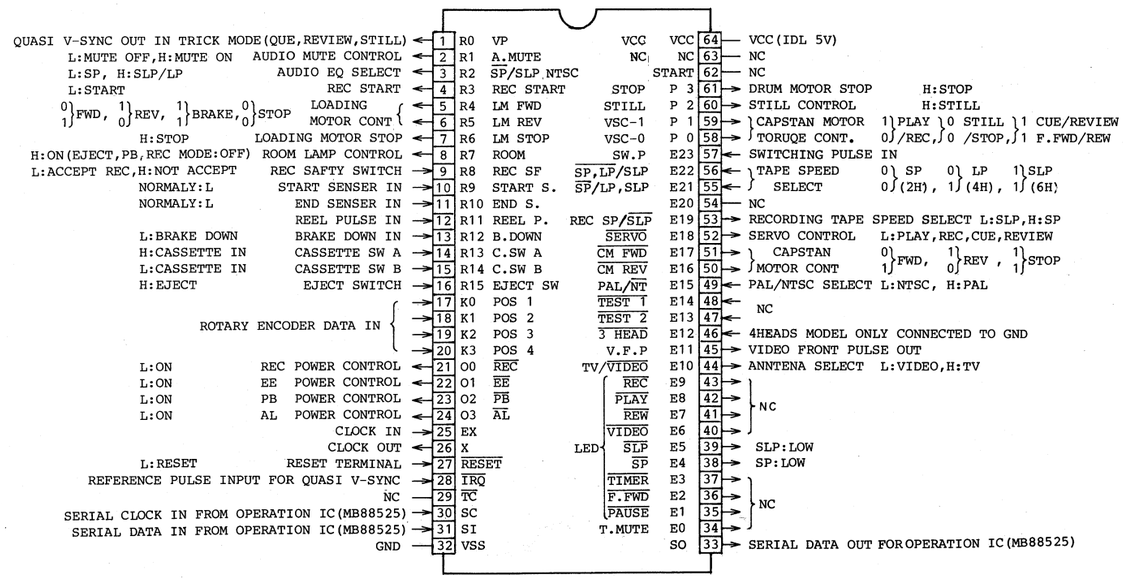
EHM-M96A8U68L (VIDEO Y SYGNAL PROCESS IC)



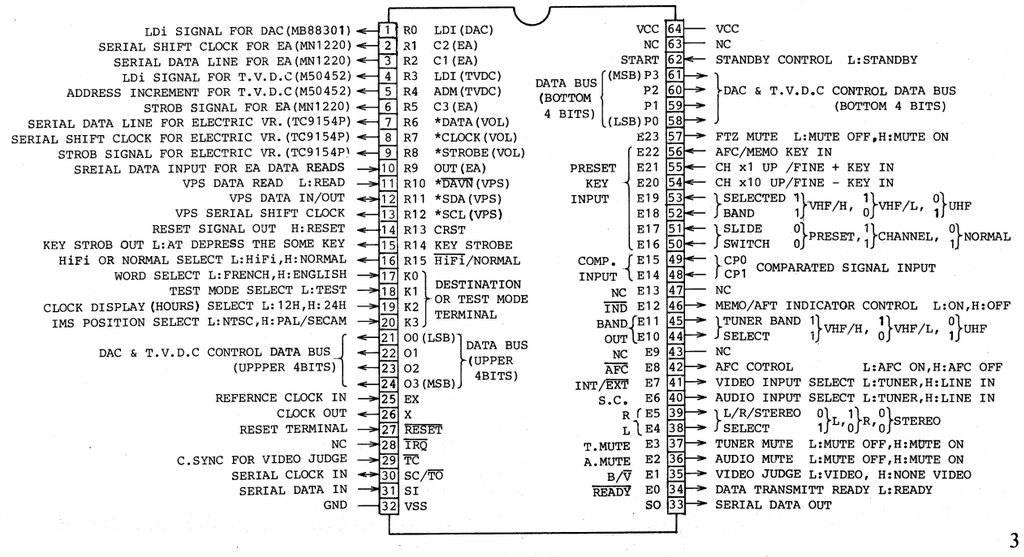
FS-C14K (FM MODULATOR/DEMODULATOR IC)

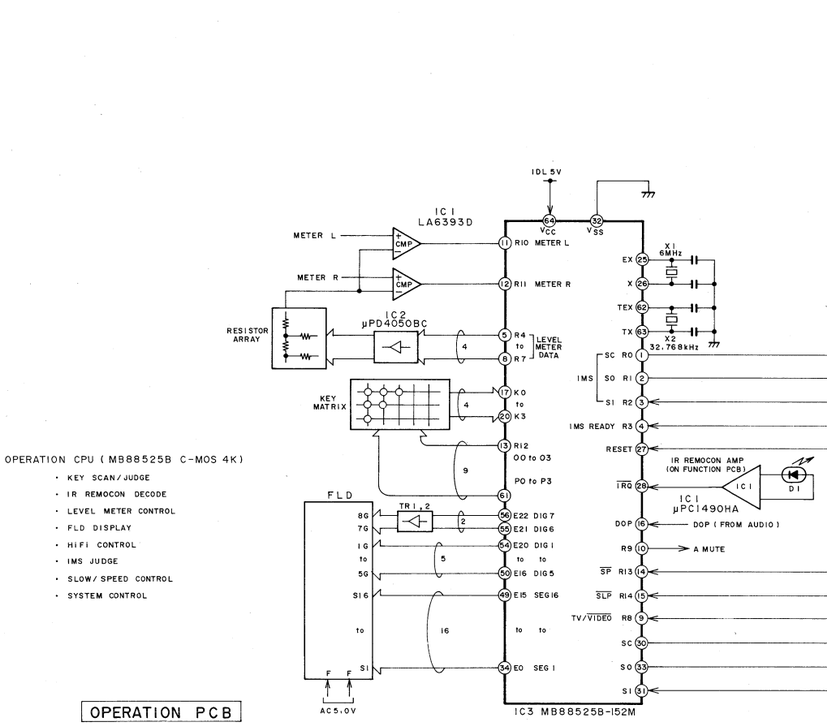


MB88521-140M (SYSTEM CONTROL)



MB88521-165L (H-IMS5)

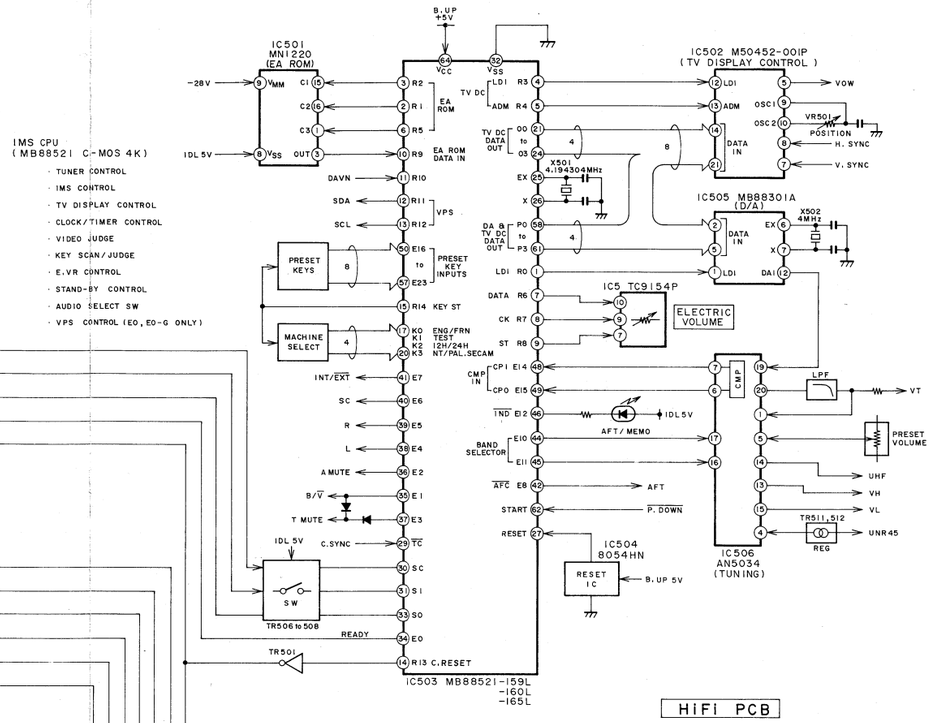

LDi SIGNAL FOR DAC (MB88301)
SERIAL SHIFT CLOCK FOR EA (MN1220)
SERIAL DATA LINE FOR EA (MN1220)
LDi SIGNAL FOR T.V.D.C (M50452)
ADDRESS INCREMENT FOR T.V.D.C (M50452)
STROB SIGNAL FOR EA (MN1220)
SERIAL DATA LINE FOR ELECTRIC VR. (TC9154P)
SERIAL SHIFT CLOCK FOR ELECTRIC VR. (TC9154P)
STROB SIGNAL FOR ELECTRIC VR. (TC9154P)
SREIAL DATA INPUT FOR EA DATA READS
VPS DATA READ L:READ
VPS DATA IN/OUT
VPS SERIAL SHIFT CLOCK
RESET SIGNAL OUT H:RESET
KEY STROB OUT L:AT DEPRESS THE SOME KEY
HiFi OR NORMAL SELECT L:HiFi, H:NORMAL
WORD SELECT L:FRENCH, H:ENGLISH
TEST MODE SELECT L:TEST
CLOCK DISPLAY (HOURS) SELECT L:12H, H:24H
IMS POSITION SELECT L:NTSC, H:PAL/SECAM
DAC & T.V.D.C CONTROL DATA BUS (UPPPER 4BITS)
REFERNCE CLOCK IN
CLOCK OUT
RESET TERMINAL
NC
C.SYNC FOR VIDEO JUDGE
SERIAL CLOCK IN
SERIAL DATA IN
GND
R0 LDI (DAC)
R1 C2 (EA)
R2 C1 (EA)
R3 LDI (TVDC)
R4 ADM (TVDC)
R5 C3 (EA)
R6 *DATA (VOL)
R7 *CLOCK (VOL)
R8 *STROBE (VOL)
R9 OUT (EA)
R10 *DAVN (VPS)
R11 *SDA (VPS)
R12 *SCL (VPS)
R13 CRST
R14 KEY STROBE
R15 HIFI/NORMAL
K0 K1 K2 DESTINATION OR TEST MODE TERMINAL
K3
O0 (LSB) O1 O2 O3 (MSB) DATA BUS (UPPER 4BITS)
EX
X
RESET
IRQ
TC
SC/TO
SI
VSS
VCC VCC
NC NC
START STANDBY CONTROL L:STANDBY
DATA BUS (BOTTOM 4 BITS) (MSB) P3 P2 P1 (LSB) P0 DAC & T.V.D.C CONTROL DATA BUS (BOTTOM 4 BITS)
E23 FTZ MUTE L:MUTE OFF, H:MUTE ON
E22 AFC/MEMO KEY IN
PRESET KEY INPUT E21 CH x1 UP /FINE + KEY IN
E20 CH x10 UP/FINE - KEY IN
E19 SELECTED 1 BAND 1 VHF/H, 1 VHF/L, 0 UHF
E18
E17 SLIDE 0 SWITCH 0 PRESET, 1 CHANNEL, 0 NORMAL
E16
COMP. INPUT E15 CP0 E14 CP1 COMPARATED SIGNAL INPUT
NC E13 NC
IND E12 MEMO/AFT INDICATOR CONTROL L:ON, H:OFF
BAND OUT E11 TUNER BAND 1 SELECT 1 VHF/H, 0 VHF/L, 1 UHF
E10
NC E9 NC
AFC E8 AFC COTROL L:AFC ON, H:AFC OFF
INT/EXT E7 VIDEO INPUT SELECT L:TUNER, H:LINE IN
S.C. E6 AUDIO INPUT SELECT L:TUNER, H:LINE IN
R E5 L E4 L/R/STEREO 0 SELECT 1 L, 0 R, 0 STEREO
T.MUTE E3 TUNER MUTE L:MUTE OFF, H:MUTE ON
A.MUTE E2 AUDIO MUTE L:MUTE OFF, H:MUTE ON
B/V E1 VIDEO JUDGE L:VIDEO, H:NONE VIDEO
READY E0 DATA TRANSMITT READY L:READY
SO SERIAL DATA OUT



OPERATION CPU (MB88525B C-MOS 4K)

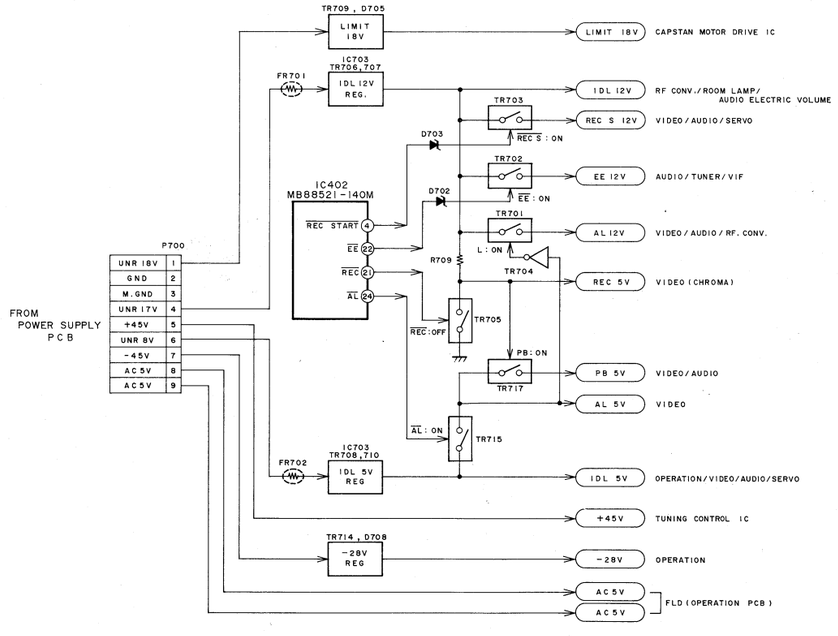
- KEY SCAN/JUDGE
- IR REMOCON DECODE
- LEVEL METER CONTROL
- FLD DISPLAY
- HiFi CONTROL
- IMS JUDGE
- SLOW/SPEED CONTROL
- SYSTEM CONTROL

OPERATION PCB

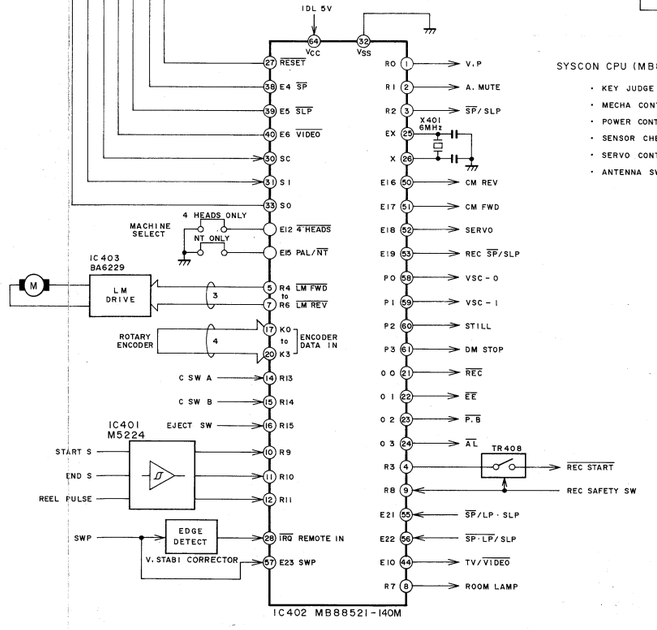


HiFi PCB

POWER SUPPLY PCB



MAIN PCB



SYSCON CPU (MB88521 C-MOS 4K)

- KEY JUDGE
- MECHA CONTROL
- POWER CONTROL
- SENSOR CHECK
- SERVO CONTROL
- ANTENNA SWITCH

VS-515U/UM, VS-525U
VS-555U/UM, VS-565U
VS-515U
SYSTEM CONTROL
POWER SUPPLY
BLOCK DIAGRAM

NO.4 - 1 861112A

DM PG
REC/PB

fsc
REC/PB

DM PG
PB

V SYNC
REC/PB

SWITCHING PULSE
REC/PB

③ CM PHASE
② CM SPEED
REC/PB

⑫ DM PHASE
⑬ DM SPEED
REC/PB

V SYNC 2
REC/PB

DM FG
REC/PB

TRACKING
REC/PB

CTL
PB

CM FG
REC/PB

CTL
REC

CTL AMP OUT
PB

DRUM MOTOR BLOCK SM-230B/C

IC1 TA7245F
(DRUM MOTOR DRIVE AMP)
LA
LB
LC
RF
VCC
CONTROL IN
POSITION DET
HD3
HD2
HD1
IDL 5V
TR1
CLAMP
LIMIT 18V
J101
W500
1 MOTOR GND
2 LIMIT 18V
3 DM PG
4 GND
5 IDL 5V
6 DM CTL
7 FG

OPERATION PCB
IDL 5V
EXT TRACKING
VR2
P2
5 TRK 5
TRACKING PRESET
VR501
P501
CTL HEAD
CTL 1
GND 2
CTL AMP
CTL GND

OPERATION PCB
IDL 5V
SLOW TRACKING
VR3
P2
6 SLOW TRK 6

CAPSTAN MOTOR
P502
FG + 1
CM + 2
CM − 3
FG − 4

IC501(2/2)
TRACKING PRESET
TR MM
REC CTL
CTL AMP
CTL GND

IC501(1/2)
AN3792
(DRUM INTERFACE)
PB SWITCHING POINT
R513
C507
LPF
FF-1,2 1/3
MM
FF3 1/2
SWITCHING PULSE
SWP
"V SYNC" FROM TR712 CORRECTOR
"fsc" FROM TR12 EMITTER
FINE SLOW PULSE
IC506(1/2)
M5223L

IC503 MN6178XA
(DIGITAL SERVO)
MODE GENERATOR
MODE
TEST
VSS
D502
R515
R516
REC START 12V
PB FROM
CM FWD FROM
VSC 1 FROM
VSC 0 FROM
SP/LP.SLP FROM
SP.LP/SLP FROM
STILL FROM
DM TIMING CONT
PHASE COMP
PWM (D/A)
DM PHASE ERROR
LPF
DM SPEED ERROR
REF PULSE GEN
REF PULSE
REF OSC
DM FG
TRACKING SIGNAL
CTL PULSE
CAPSTAN FG
CTL COUNT DOWN
CM TIMING CONT
PG COUNT DOWN
FG COUNT DOWN
1/2
SLOW
SP
SLP
P.B
REC

"REC START 12V" FROM TR703 CORRECTOR

2 VIDEO HEADS MODEL ONLY
IC507(1/2)
IC507(2/2)
BA236A
MM10
MM9
MM7
IC508(1/2)
BA236A
D509
D510
D507
D508
(9.4msec)
TR508
TR509
TR510
H: ON
SP/LP.SLP
SP: ON
LP.SLP: ON
SP: OFF
TR501
X VALUE CORRECTOR
4 VIDEO HEADS MODEL ONLY

"STILL" FROM IC402 PIN 60
TR513
D528
TR518
SLOW TRK
BRAKE
V SYNC 2 OUT
CTL
SLOW TRK
R529,530
C517,518
CM SPEED ERROR
R535,C521,522
PHASE COMPENSATOR
CM PHASE ERROR
R532,533
C519,520
TR503
TR504
STILL: ON
REF VOLTAGE
IC505
M5223L
TR515
H: ON

IC502 AN3794
(CAPSTAN INTERFACE)
CM FG
CTL
COUNTER
I/M
I/N
GAIN SELECT
OUTPUT SELECTOR
TR502
STILL: ON
"VSC 1" FROM IC402 PIN 59
SP/LP.SLP
SP.LP/SLP
"PB" FROM IC402 PIN 23
"REC SP/SLP" FROM IC402 PIN 53

IC504 M54548L
(CAPSTAN MOTOR DRIVE)
CURRENT LIMIT
LIMIT 18V
IDL 5V
MODE DET.
MOTOR DRIVE
"CM REV"
"CM FWD"
"SERVO" F

TRUTH
INPU
S1 S2
L L
L L
L H
L H
H L
H L
H H
H H

DRUM MOTOR SPEED
DRUM MOTOR PHASE
DRUM MOTOR CONTROL
CAPSTAN MOTOR SPEED
CAPSTAN MOTOR PHASE
CAPSTAN MOTOR CONTROL

REC/PB
CM FG

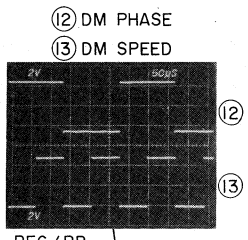
REC/PB
④
②

DC2.7V

REC/PB
⑥
⑧

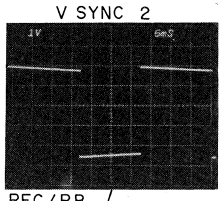
DC2.7V

REC/PB



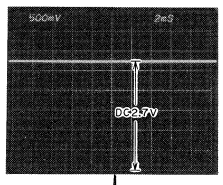
⑫ DM PHASE
⑬ DM SPEED

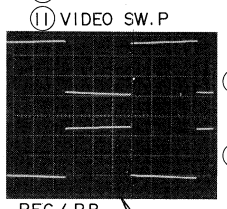
REC/PB



V SYNC 2

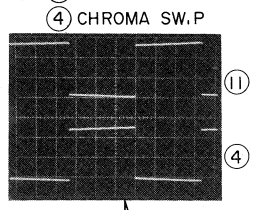
REC/PB





⑫ SW'ING PULSE
⑪ VIDEO SW.P

REC/PB



⑪ VIDEO SW.P
④ CHROMA SW.P

3 MN6178XA
TAL SERVO)

MODE GENERATOR

MODE

REC START 12V FROM TR703 CORRECTOR
PB FROM IC402 PIN (23)
CM FWD FROM IC402 PIN (51)
VSC 1 FROM IC402 PIN (59)
VSC 0 FROM IC402 PIN (58)
SP/LP.SLP FROM IC502 PIN (4)
SP.LP/SLP FROM IC502 PIN (5)
STILL FROM IC402 PIN (60)

R515
R516
D502
TEST
V_{SS}

PHASE COMP
PWM (D/A)
LPF
DM PHASE ERROR
PHASE COMPENSATOR
C530, 531, R545

REF PULSE
DM TIMING CONT
SPEED COMP
DM SPEED ERROR

CM TIMING CONT
CM PHASE COMP

V SYNC 2 OUT

C535
C533
R549
TR521
STILL : ON
"STILL" FROM IC402 PIN (60)

MIX
IC506
M5223L

TR522
H: DM STOP
"DM" FROM IC402 PIN (61)

IDL 5V
"SWITCHING" PULSE FROM IC501 PIN (14)
SWITCHING PULSE FOR VIDEO
IC512 BU4070B
CHROMA SWITCHING PULSE

"DOC" FROM IC1 PIN (29)
D14
D12
TR44
"A MUTE" FROM IC402 PIN (2)

BU4070B TRUTH TABLE

IN 1	IN 2	OUT
0	0	0
1	0	1
0	1	1
1	1	0

SYSCON CPU
IC402
MB88521-140M

(2) A MUTE
(4) REC START
(21) REC
(23) PB
(50) CM REV
(51) CM FWD
(52) SERVO
(53) REC SP/SLP
(55) SP/LP.SLP
(56) SP.LP/SLP
(57) SWITCHING PULSE
(58) VSC 0
(59) VSC 1
(60) STILL
(61) DM

"STILL" FROM IC402 PIN (60)
"CM REV" FROM IC402 PIN (50)
"CM FWD" FROM IC402 PIN (51)
D521
D520
D516
D515
IC509(2/2)
IC509(1/2) BA236A
IC510(2/2)
TR513
D528
D513
D519
TR518
TR514
RESET
TR508
DEL ONLY
IC508(1/2) BA236A
TR511
IC509 (1/2)
SLOW TRK
IDL 5V
IC508(2/2)
BRAKE
TR509
H: ON
D511
D514
D518
SLP 5V
TR520
SLP: ON
D523
CTL
SLOW TRK
IC513(2/2)
D526
D522
D529
TR516
D530
IC513(1/2) BA236A
TR501
ON : LP. SLP
OFF : SLP
"SP/LP.SLP" FROM IC502 PIN (4)
R529, 530
C517, 518
CM SPEED ERROR
LPF
C521, 522
ASE ENSATOR
CM PHASE ERROR
R532, 533
C519, 520
TR524
TR47
SLP : ON

"SP.LP/SLP" FROM IC502 PIN (5)
"SWITCHING" PULSE FROM IC501 PIN (14)
IC512 BU4070B
HEAD CONTROL TO PREAMP PCB
SWITCHING PULSE FOR VIDEO
"REC" FROM IC402 PIN (21)
D525
TR46
SLP: ON
TR48
L: ON
TR45
H: ON
"COMP OUT" FROM PRE AMP

BU4070B TRUTH TABLE

IN 1	IN 2	OUT
0	0	0
1	0	1
0	1	1
1	1	0

MODE \ TERMINAL	(51) CM FWD	(50) CM REV
FWD	L	H
REV	H	L
STOP	H	H

TAPE SPEED \ TERMINAL	(55) SP/LP.SLP	(56) SP.LP/SLP
SP	L	L
LP	H	L
SLP	H	H

MODE \ CONTROL	VSC-0	VSC-1	SERVO	CM FWD	CM REV
PLAY	H	L	L	L	H
CUE	H	H	L	L	H
REVIEW	H	H	L	H	L
STILL	H	H	H	H	H
F. FWD	H	H	H	L	H
REW	H	H	H	H	L

TR515
H: ON
"STILL" FROM IC402 PIN (60)
LIMIT 18V
LIMIT

IC504 M54548L
(CAPSTAN MOTOR DRIVE)

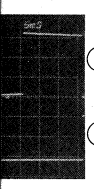
IDL 5V
MODE DET.
MOTOR DRIVE
VS
VCC
V1
V2
O_2
O_1
S3
S2
S1

"CM REV" FROM IC402 PIN (50)
"CM FWD" FROM IC402 PIN (51)
"SERVO" FROM IC402 PIN (52)
"REC SP/SLP" FROM IC402 PIN (53)

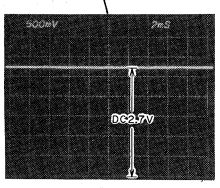
TRUTH TABLE

INPUT S1	S2	S3	OUTPUT O_1	O_2	VCC SELECT	MODE
L	L	L	"OFF" STATE	"OFF" STATE	—	STOP
L	L	H	H	L	VS	PLAY ⊕
L	H	L	L	H	VS	PLAY ⊖
L	H	H	H	L	V2	F.FWD(2)
H	L	L	L	H	V2	REW(2)
H	L	H	H	L	V1	F.FWD(1)
H	H	L	L	H	V1	REW(1)
H	H	H	L	L	VS	BRAKE

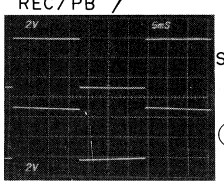
4 VIDEO HEADS MODEL ONLY



⑥
⑧

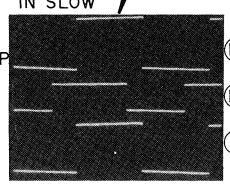


REC/PB



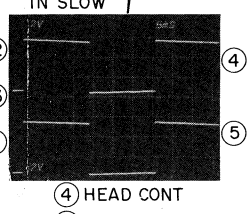
SWP
⑩

IN SLOW

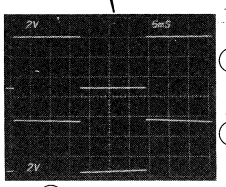


⑫
⑬
⑪

IN SLOW



④
⑤
④ HEAD CONT
⑤



①
③
① ③ VIDEO SWP

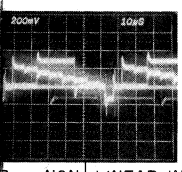
VS-515U/UM, VS-525U
VS-555U/UM, VS-565U
VS-5151U
SERVO
BLOCK DIAGRAM

NO. 4-2 861113A

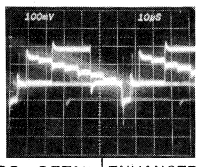
A
B
C
D
E
F
1
2
3
4
5
6
7
8
REC/PB (EE) C. SYNC
PB PB Y
REC
PB DETAIL ENHANCER IN
REC MAIN EMPHA OUT
PB CLAMP IN
PB NON LINEAR IN
PB DETAIL ENHANCER OUT
EE/REC/PB SYNC LEVEL DET
REC/PB EE VIDEO
REC FM OSC OUT
REC DETAIL ENHANCER IN
REC
REC CLAMP IN
REC NON LINEAR IN
REC DETAIL ENHANCER OUT
2 VIDEO HEADS TYPE
IC2 HA11752
4 VIDEO HEADS TYPE
IC2 AN3311K
ROTARY TRANSFORMER
REC SIGNAL
HEAD CONT
SWING PULSE
P1
P2
P3
SW PULSE
PB FM(Y)
PB FM
PB CHROMA
PB C
PB 5V
REC SIG
SLPREC SIG
SPREC SIG
COMP OUT
TRIC ©
HEAD CTL
GND
SP
SLP
CH1
CH2
TR5
TR6
TR7
TR8
TR9
TR10
TR11
TR12
TR13
TR14
TR15
TR16
TR17
TR19
TR20
TR21,22
TR23
TR24
TR25
TR26
TR32
TR34 to TR39
REC ON
REC:ON
PB:ON
H:ON
L:ON
SP:ON
SP:OFF
REC 5V
REC:ON
PB5V
AL5V
EE5V
VCC1
VCC2
2nd AMP
SW AMP
CASCODE AMP
AGC DET
VCA
GAIN AMP
EF
CHROMA TRAP
L4.C36
PEAKING AMP
PEAKING CORRECTER
L38 C97 R132
REC AMP
MIX
LPF
L9, C22
7MHz
LPF+DL
DETAIL ENHANCER
2.7MHz-685ns
D5
FL1
VR1
REC Y CURRENT
VR2 REC CHROMA CURRENT
R88
AMP
D9, D10
CLAMP
D.O.C PULSE
PB FM
C68
C27
SP/LP.SLP
IC1 EHM-M96A8U68L
W/D CLIP
EMPHA
CLAMP
NON-LINE EMPHA
12dB AMP
FM MOD
NON-LINE MIX
SYNC SEP
DELAY
DET
AGC
PB AMP
SUB CLAMP
CLAMP DET
EE AMP
AMP MUTE
Y/C MIX
MIX
LPF
LIMIT
EE/VV AMP
PICTURE CONT
DOC DET
DEL
REC 4.6V
PB 2.6V
VP FROM IC402 ①
VF P FROM IC402 ㊺
VR1
PICTURE
SHARP SOFT
C.SYNC FROM IC701 ⑩
FL2 (1/3)
1.20MHz LPF
FL2 (2/3)
3.58MHz BPF
FL2 (3/3)
4.21MHz BPF
REL/PB L-C
REC/PB H-C
DL2
COMB FILTER
4.21MHz CARRIER
VIF UNIT VIDEO OUT
VIDEO IN
EXT/INT
H:INT
IC3 LA7016
BURST DOWN
BURST GATE
MAIN BM
PB
B/W
REC OUT AMP
PB OUT AMP
VCO 321fH
AGC
KILLER DET
SCHMIT
APC DET
90° SHIFT
X TAL VCO
BG DET
SUB B.M
VCC
R/P DET
AGC DET
P/N/S DET
R63
R58 C49,50,51 L16,17
LPF 1.2MHz
4.2MHz TRAP L35 C95
R46 C38 X1 3.579545MHz C39 L14 L13
SLP:ON
TR49
TR12
E F
40fH + fs
MAIN PCB
REC/PB(EE). V SYNC
PB SUB CLAMP OUT
REC SUB CLAMP OUT
PB EE/VV VIDEO OUT
EE/REC EE/VV VIDEO OUT
PB HIGH CHROMA
REC LOW CHROMA
PB 3.58MHz BPF IN
REC 3.58MHz BPF IN
PB COMB FILTER OUT
REC REC VIDEO IN
PB LOW CHROMA IN
REC/PB REC : X'TAL VCO PB : X'TAL OSC
REC/PB REC : X' TAL VCO BP : X' TAL OSC
REC/PB 4.12MHz CARRIER OUT

F G H I J K

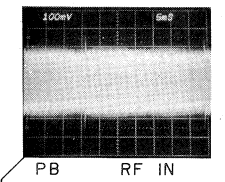
1 2 3 4 5 6 7 8



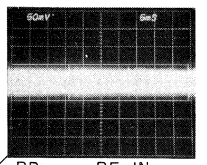
B NON LINEAR IN



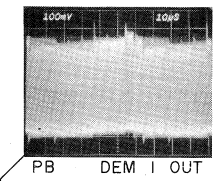
PB DETAIL ENHANCER OUT



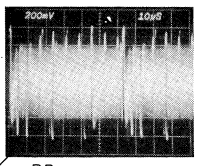
PB RF IN



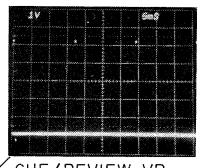
PB RF IN (IH DELAY OUT)



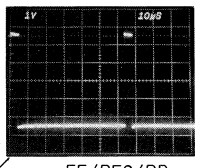
PB DEM I OUT



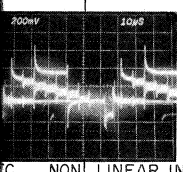
PB



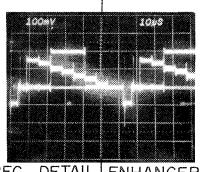
CUE/REVIEW VP



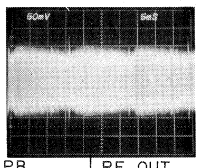
EE/REC/PB AFC SYNC IN



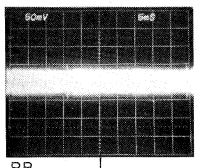
C NON LINEAR IN



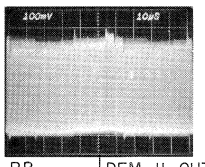
REC DETAIL ENHANCER OUT



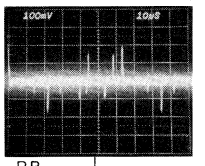
PB RF OUT (IH DELAY IN)



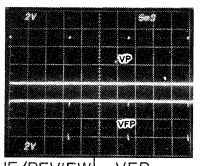
PB



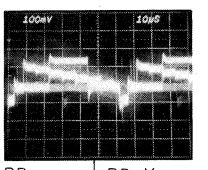
PB DEM II OUT



PB



CUE/REVIEW VFP



PB PB Y

PB 5V

D.O.C PULSE

SP/LP.SLP

TR17

H:ON

PB FM

DLI IH DELAY

DOUBLE LIMITER

LPF HPF

REC OV
PB 1.7V

C71

45 46 44 43 10 30 42 56 29 28 25 26 27 24 23 22 21

18 17 16 15

NON-LINE EMPHA

12dB AMP

NON-LINE MIX

Y/C MIX

MIX

LPF

LIMIT

11 12 13 14

28 27 26 25 24 23 22 21 20 19 18 17 16 15

DOC DET

DOC SW

DOC AMP

LIMIT I

MIX

LIMIT II

DEM I

DELAY

LIMIT III

DEM II

MIX

PICTURE CONT

LIM

CORR DET

LIMIT

SW

DIFF AMP

1 2 3 4 5 6 7 8 9 10 11 12 13 14

13 12 14 15 18 19 20 32 33 34 35 37 17 39 41

L8, C22 SUB LPF 4.3MHz

L9, C21 SUB LPF 2MHz

2.2MHz PEAKING R33, 34 C19, 20 L4

TR50

SP:ON

SP/LP.SLP

REC 4.6V
PB 2.6V

VP FROM IC402 (1)

VF P FROM IC402 (45)

PB5V

VR1

PICTURE

SHARP SOFT

SHARP 3.6V
NORMAL 2.3V
SOFT 1.0V

D2

EE5V

TR1.2.3 BLACK/VIDEO PICTURE CONTROL

TR4,5 CLAMP

TR8 IMS MIX

TR9 EF

R25 75 OHMS

VIDEO OUT

TR6,7

VOW

TR10 EF

TO RF CONVERTER

AL5V

H.SYNC

5V

D1

R12

R13

TR11

B/V

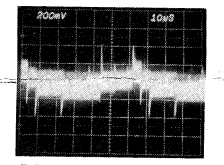
BLACK : ON
VIDEO : OFF

REC CHROMA SIGNAL LINE

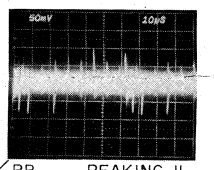
PB CHROMA SIGNAL LINE

REC Y SIGNAL LINE

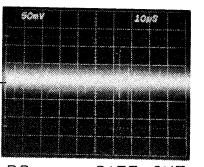
PB Y SIGNAL LINE



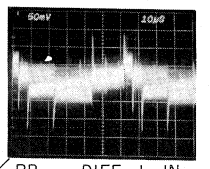
PB PEAKING I



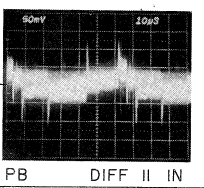
PB PEAKING II



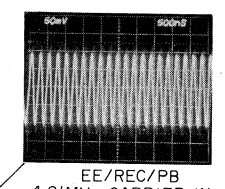
PB DIFF OUT



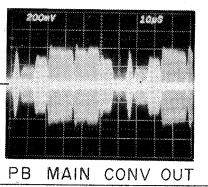
PB DIFF I IN



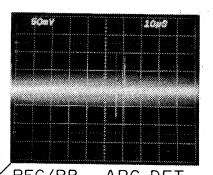
PB DIFF II IN



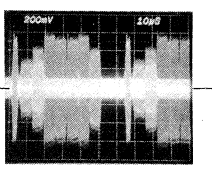
EE/REC/PB 4.21MHz CARRIER IN



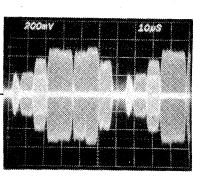
PB MAIN CONV OUT



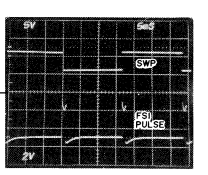
REC/PB APC DET



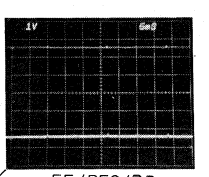
REC LOW CHROMA



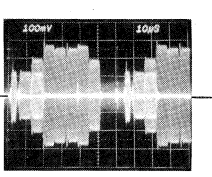
PB HIGH CHROMA



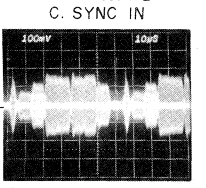
REC/PB FSIP OUT



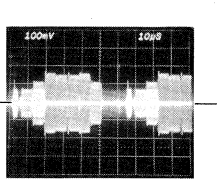
EE/REC/PB C. SYNC IN



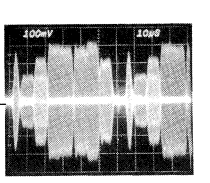
REC ACC OUT



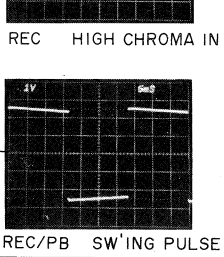
PB ACC OUT



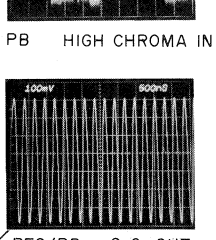
REC HIGH CHROMA IN



PB HIGH CHROMA IN



REC/PB SW'ING PULSE



REC/PB S.C OUT

DL2 COMB FILTER

4.21MHz CARRIER

PB5V

17 18 19 11 15 12 9 10 6 7 8 2

22 21 20 19 18 17 16 15 14 13 12

BURST DOWN

BURST UP

MAIN BM

B/W

PB

AGC

P R

KILLER DET

SCHMIT

REC OUT AMP

PB OUT AMP

VCO 321 fH

APC DET

90° SHIFT

AGC DET

P/N/S DET

X TAL VCO

BG DET

SUB B.M

VCC

R/P DET

18 17 16 15 14 13 12 11 10

BGP

V-GATE

MM

FSL

ERROR DET

FF

M.M

D-PLL

4Φ GATE

1/4

H OUT

COUNTER 1/321

AFC DET

1/8

VCO-J-DET

CM DET

PAL DEL

IC2 EHD-AW2620

Vcc

H SYNC

22 28 29 30 14 13 31 32 33 34 5 42 36 37 38 39 4 3 40

B.G.P

LPF

EE5V

TRI3

D2

REC (FROM IC402 (21))

AL5V

VIDEO SWITCHING PULSE

L13

AL5V

R46 C38 X1 3.579545MHz C38

SP/LP.SLP FROM IC402 (55)

SLP:ON

SP.LP/SLP FROM IC402 (56)

TR49

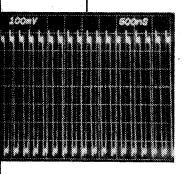
TR12 EF

40fH + fs

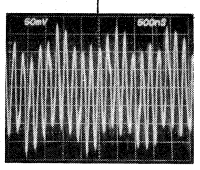
ESC OUT

TO SERVO IC503 (10)

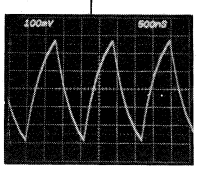
TO SYSTEM IC701 (2)



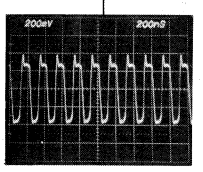
REC/PB
REC: X' TAL VCO
BP: X' TAL OSC



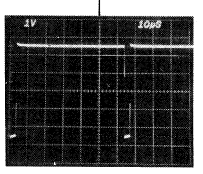
REC/PB
4.12MHz CARRIER OUT



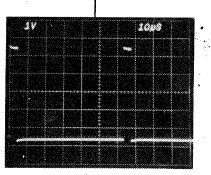
REC/PB
40fH OUT



REC/PB
321fH VCO OUT



EE/REC/PB
B.G.P OUT

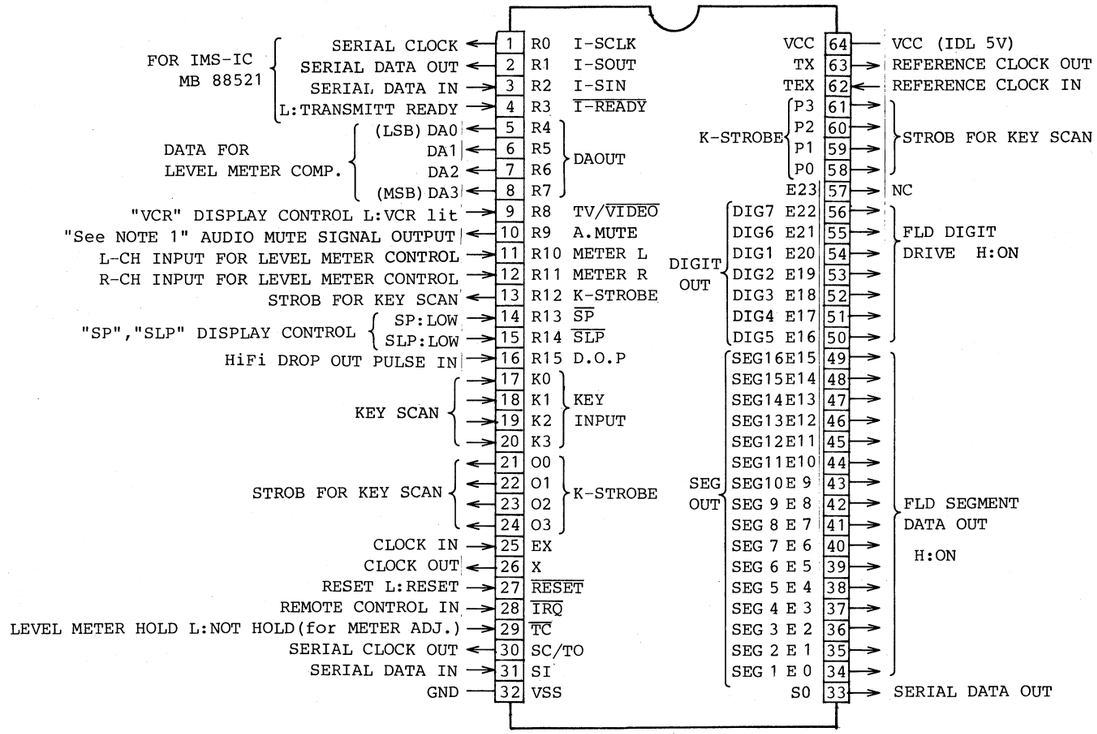


REC/PB
AFC SYNC OUT

VS-515U/UM, VS-525U
VS-555U/UM, VS-565U
VS-5151U
VIDEO
BLOCK DIAGRAM

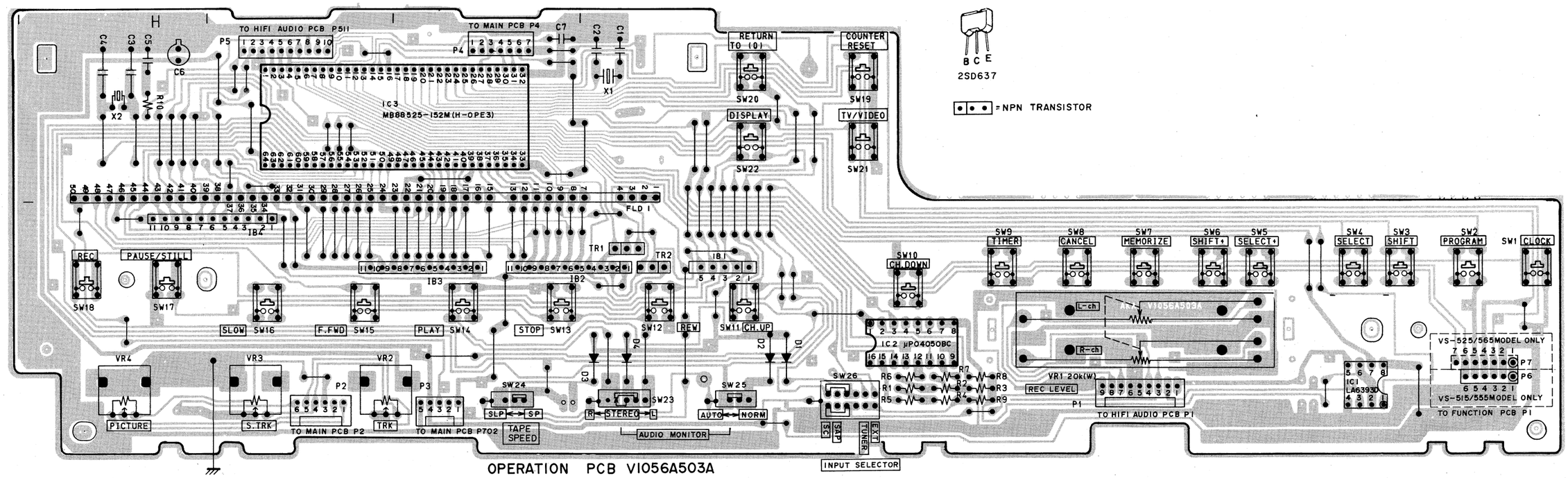
NO. 4-3 860505C

MB88525B-152M (OPERATION CPU)

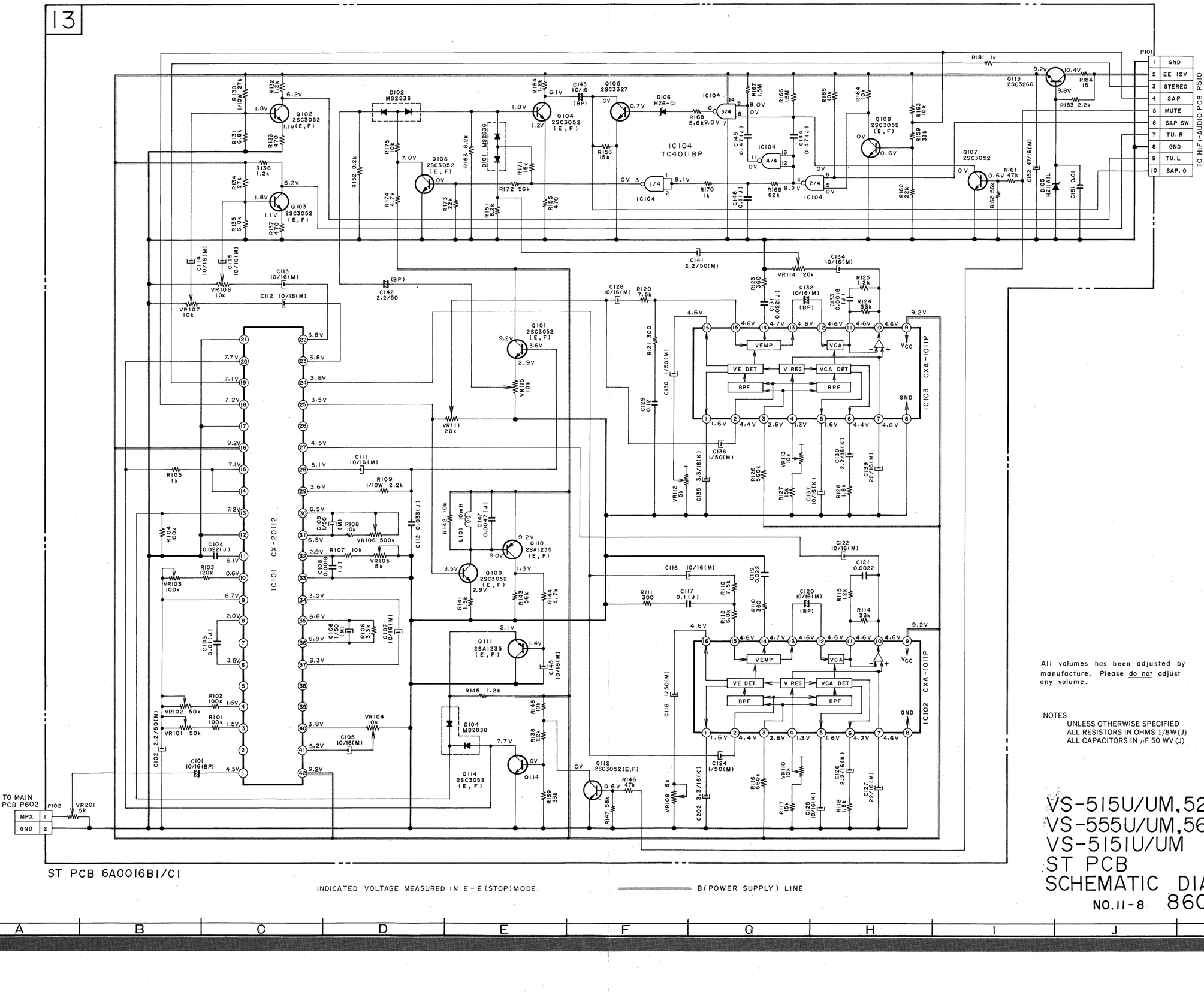

FOR IMS-IC MB 88521
SERIAL CLOCK 1 R0 I-SCLK
SERIAL DATA OUT 2 R1 I-SOUT
SERIAL DATA IN 3 R2 I-SIN
L:TRANSMITT READY 4 R3 I-READY
DATA FOR LEVEL METER COMP.
(LSB) DA0 5 R4
DA1 6 R5
DA2 7 R6
(MSB) DA3 8 R7
DAOUT
"VCR" DISPLAY CONTROL L:VCR lit 9 R8 TV/VIDEO
"See NOTE 1" AUDIO MUTE SIGNAL OUTPUT 10 R9 A.MUTE
L-CH INPUT FOR LEVEL METER CONTROL 11 R10 METER L
R-CH INPUT FOR LEVEL METER CONTROL 12 R11 METER R
STROB FOR KEY SCAN 13 R12 K-STROBE
"SP","SLP" DISPLAY CONTROL SP:LOW 14 R13 SP
SLP:LOW 15 R14 SLP
HiFi DROP OUT PULSE IN 16 R15 D.O.P
KEY SCAN 17 K0
18 K1
19 K2
20 K3
KEY INPUT
STROB FOR KEY SCAN 21 O0
22 O1
23 O2
24 O3
K-STROBE
CLOCK IN 25 EX
CLOCK OUT 26 X
RESET L:RESET 27 RESET
REMOTE CONTROL IN 28 IRQ
LEVEL METER HOLD L:NOT HOLD(for METER ADJ.) 29 TC
SERIAL CLOCK OUT 30 SC/TO
SERIAL DATA IN 31 SI
GND 32 VSS
VCC 64 VCC (IDL 5V)
TX 63 REFERENCE CLOCK OUT
TEX 62 REFERENCE CLOCK IN
K-STROBE P3 61
P2 60
P1 59
P0 58
STROB FOR KEY SCAN
E23 57 NC
DIGIT OUT DIG7 E22 56
DIG6 E21 55
DIG1 E20 54
DIG2 E19 53
DIG3 E18 52
DIG4 E17 51
DIG5 E16 50
FLD DIGIT DRIVE H:ON
SEG OUT SEG16 E15 49
SEG15 E14 48
SEG14 E13 47
SEG13 E12 46
SEG12 E11 45
SEG11 E10 44
SEG10 E 9 43
SEG 9 E 8 42
SEG 8 E 7 41
SEG 7 E 6 40
SEG 6 E 5 39
SEG 5 E 4 38
SEG 4 E 3 37
SEG 3 E 2 36
SEG 2 E 1 35
SEG 1 E 0 34
FLD SEGMENT DATA OUT
H:ON
S0 33 SERIAL DATA OUT

NOTE 1 : Will mute 0.3 sec when switched HiFi.⟷ NORM.in PB

= NPN TRANSISTOR



13



All volumes has been adjusted by manufacture. Please do not adjust any volume.

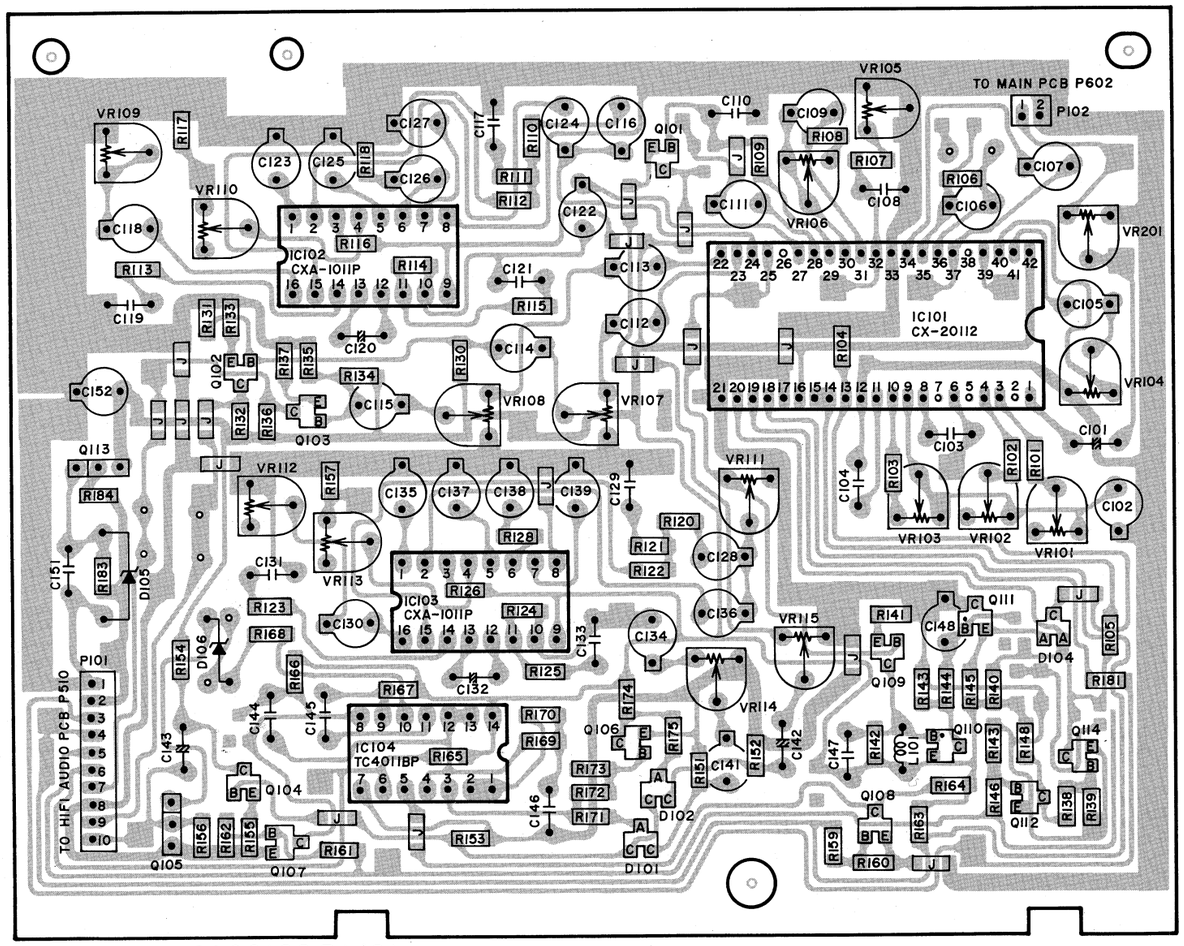
NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W(J)
ALL CAPACITORS IN μF 50 WV (J)

INDICATED VOLTAGE MEASURED IN E-E(STOP)MODE.

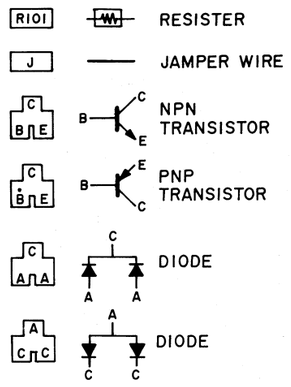
B(POWER SUPPLY) LINE

VS-515U/UM,525U
VS-555U/UM,565U/UM
VS-5151U/UM
ST PCB
SCHEMATIC DIAGRAM

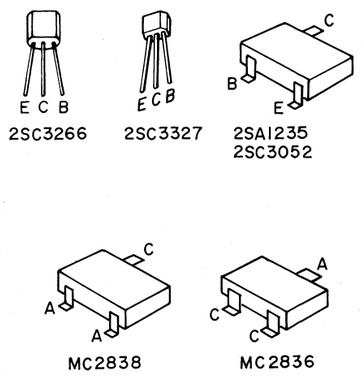
NO.11-8 860204B(A2)



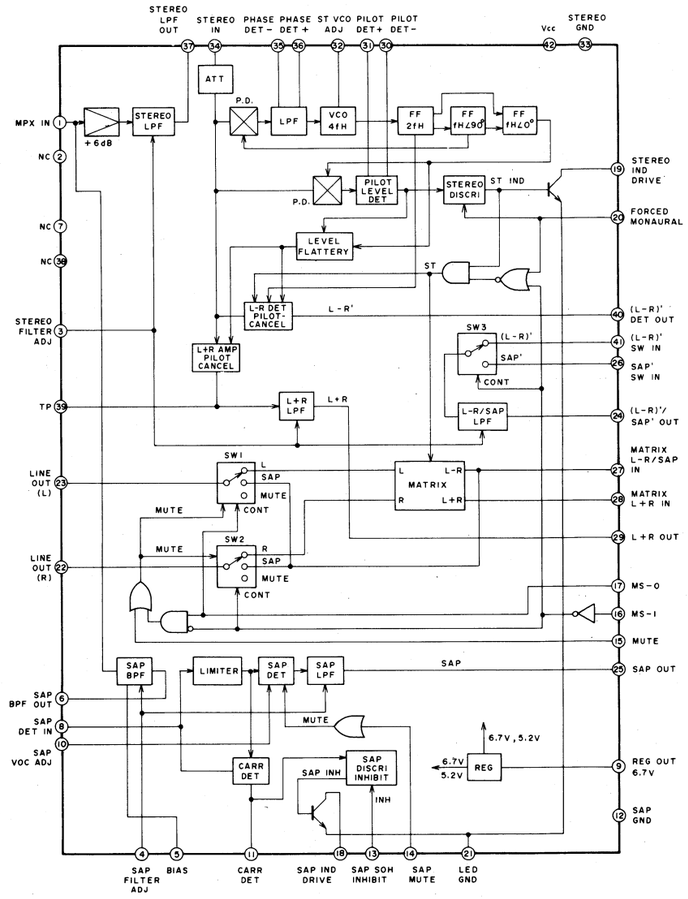
ST PCB 6A00160B1/C1

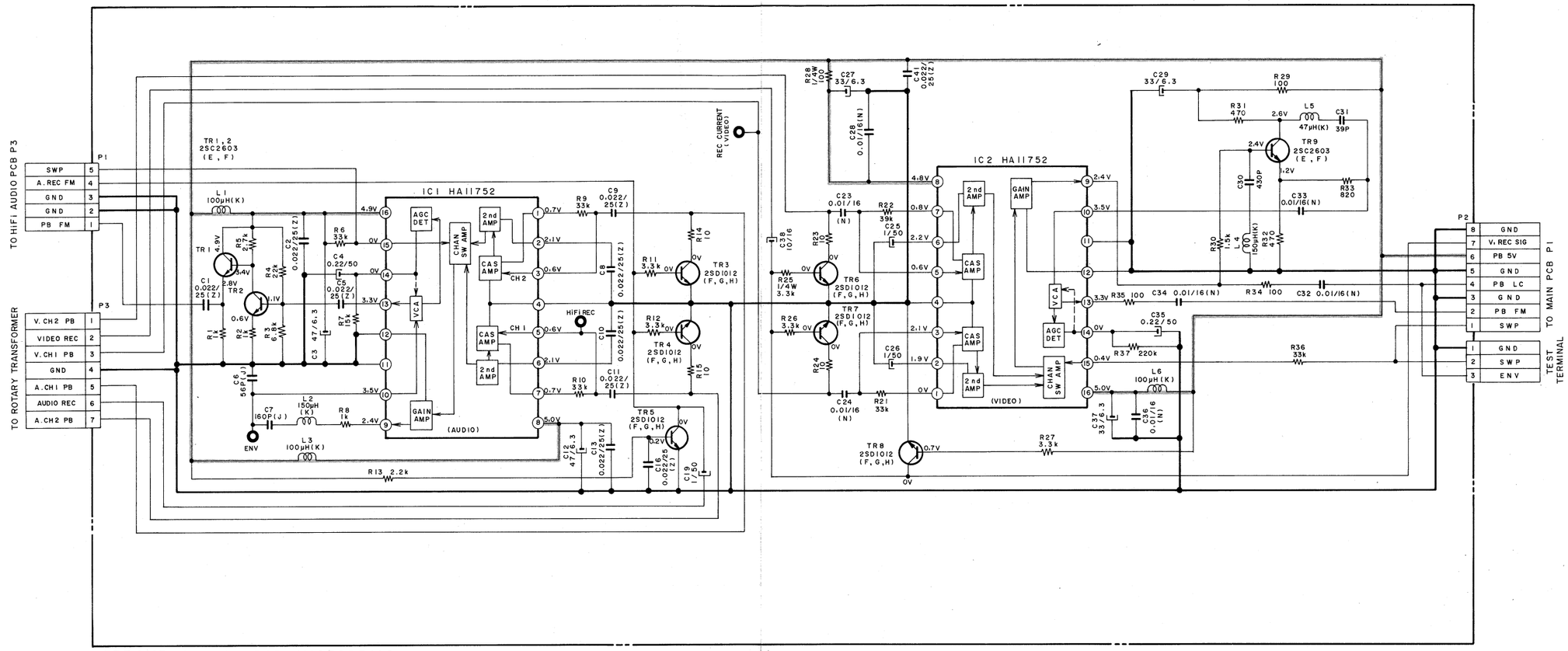


COMPONENT SHAPES



CX20112 (US SOUND MULTIPLEX DECORDER)

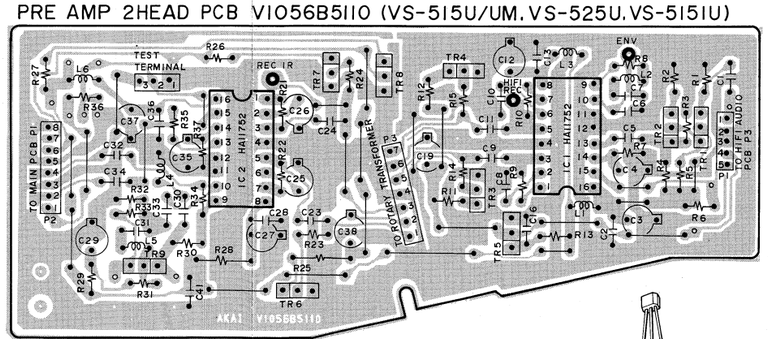




PREAMP 2 HEAD PCB V1056B5110

INDICATED VOLTAGE MEASURED IN PLAY BACK

PRE AMP 2HEAD PCB V1056B5110 (VS-515U/UM, VS-525U, VS-515IU)



E C B
2SC2603
2SD1012

=B(POWER SUPPLY) LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50 WV(M)

VS-5151U
VS-515U/UM
VS-525U
PREAMP 2 HEAD SCHEMATIC DIAGRAM

NO.11-9 861124A3

VS-555U/UM
VS-565U

TO MAIN PCB Pin ⑩ to ⑫ OF P1 — SLP REC SIG. / SP REC SIG. / GND — P2
TO MAIN PCB Pin ① to ⑨ OF P1 — SW P / V.PB FM / GND / P B C / GND / P B 5V / COMP OUT / TRIC - ① / HEAD CTL — P3
TEST TERMINAL — GND / SW P / ENV — T1

TO HiFi AUDIO PCB P3 — P1
SW P 5
A.REC FM 4
GND 3
GND 2
A.PB FM 1

TO ROTARY TRANSFORMER — P4
A.CH1 PB 1
AUDIO REC 2
A.CH2 PB 3
SP PB 4
SP REC 5
SP CH2 PB 6
LP CH2 PB 7
LP REC 8
LP CH1 PB 9

L1 100μH(K)
L2 150μH(K)
L3 5.0V 100μH(K)
L4 100μH (K)
L5 100μH(K)
L6 47μH (K)

TR1 2SC2603 (E,F)
TR2 2SC2603 (E,F)
TR3 2SD1012 (F,G,H)
TR4 2SD1012 (F,G,H)
TR5 2SD1012(F,G,H)
TR6 2SC2603 (E,F)
TR7 2SC2603 (E,F)
TR8 2SC2603 (E,F)
TR9 2SC2603 (E,F)
TR10 2SC2603 (E,F)
TR11 2SC2603 (E,F)
TR12 2SC2603 (E,F)

IC1 HA11752
IC2 AN3311K

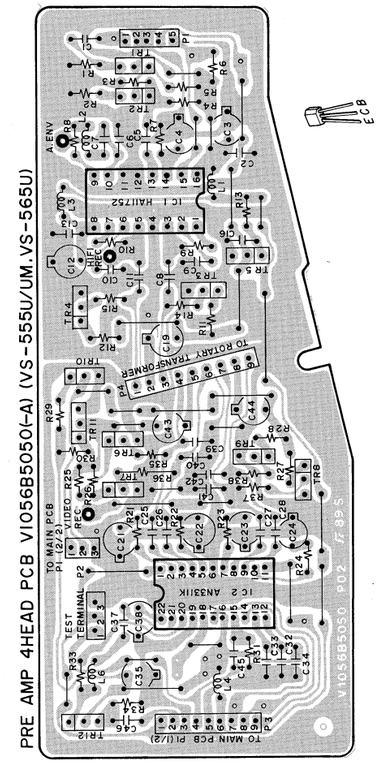
CH1 / CH2
2nd AMP / CAS AMP / CAS AMP / 2nd AMP
CHAN SW AMP
AGC DET / VCA / GAIN AMP / OUT
A.ENV
HiFi REC
VIDEO REC

AGC DET / AGC AMP / PEAKING AMP / AMP / ENVE DET / ENVE DET / COMP / AMP
S-1 / S-2 / L-2 / L-1

PREAMP 4 HEAD PCB V1056B5050 (-A)

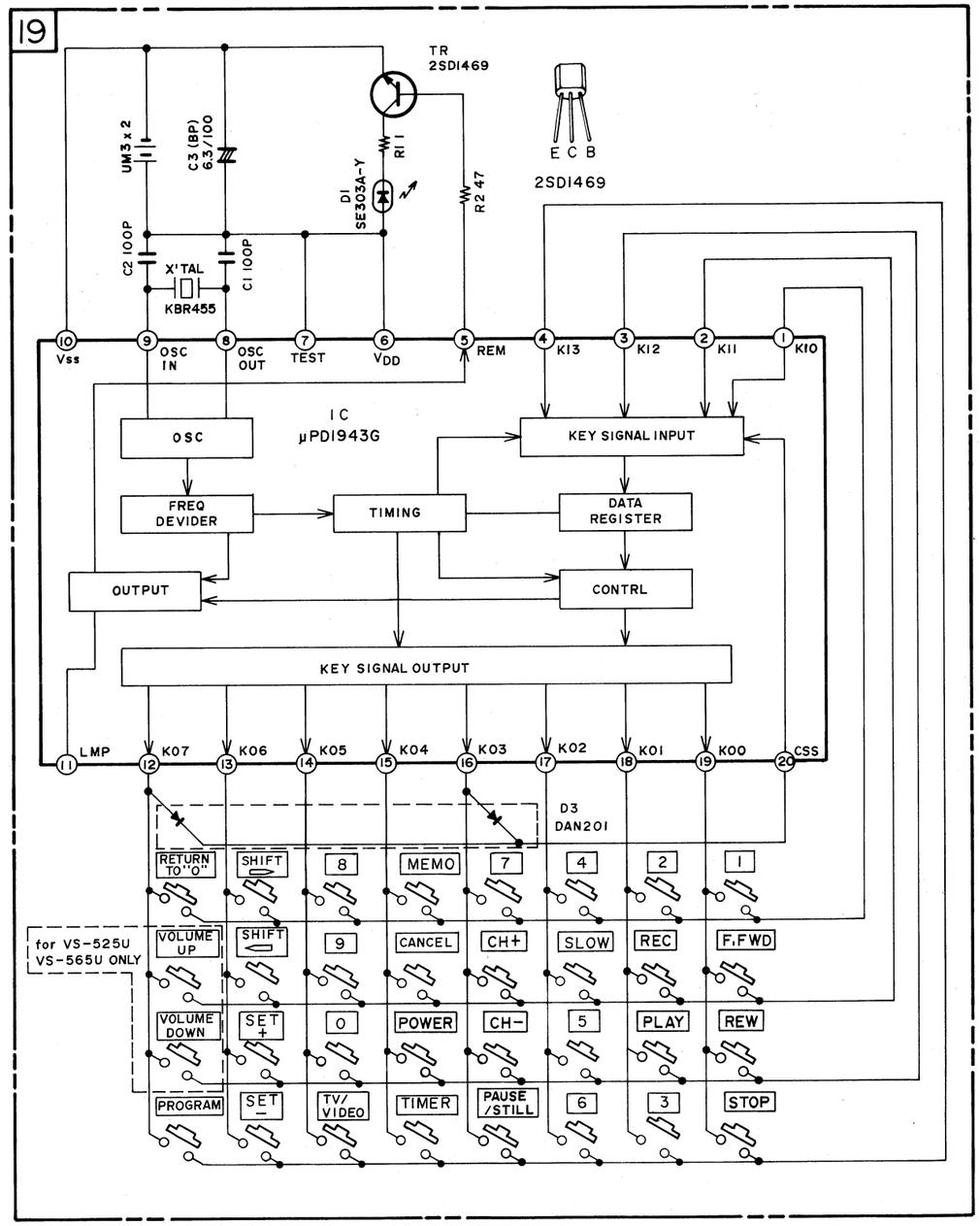
INDICATED VOLTAGE MEASURED IN PLAY BACK

= +B (POWER SUPPLY) LINE



NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 25 WV(Z)

VS-555U/UM
VS-565U
PREAMP 4 HEAD SCHEMATIC DIAGRAM
NO. 11-10 861125A



NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)

RC-V515A
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM

NO.11-11 860707B (A4)